

X / Y / Z , 3D RFID Transponder coils and antennas for LF and HF

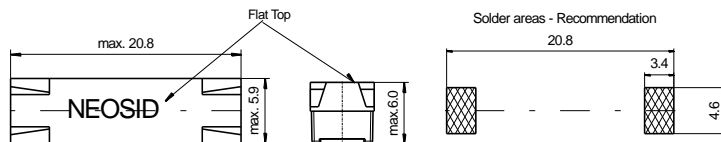
Rx-/Tx-Antennas

Series Ms 5420

L [mH]	± %	Q ≥	f _{L,Q} [kHz]	f _{res} ≥ [MHz]	R _{DC} ≤ [Ω]	I _{max} [mA]	S *) [mV/A/m]	Art. Nr.:
0.19	5	65	125	2.0	0.9	850	15	00 6173 01
0.4	5	80	125	1.5	1.3	500	25	00 6173 02
0.9	5	80	125	0.8	2.5	350	40	00 6173 03
1.2	5	80	125	0.7	5.0	250	50	00 6173 04
2.38	5	65	125	0.4	9.5	200	80	00 6173 05
2.66	5	60	125	0.36	10,0	200	85	00 6173 06
4.5	8	70	125	0.35	9.5	160	130	00 6173 07
5.6	10	30	125	0.27	14.7	150	170	00 6173 08
7.2	10	30	125	0.25	16.2	100	280	00 6173 09

Gluing with PCB by HSF optional

S-measurement with Helmholtz coil at *)125 kHz, typical value



Applications:
Transponder antenna
Decoupling in RF- and IF-circuits
Use in frequency selective circuits

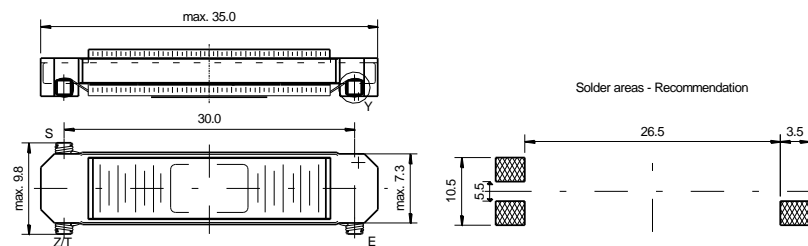


Series Ms 62

L [mH]	± %	Q ≥	f _{L,Q} [kHz]	f _{res} ≥ [MHz]	R _{DC} ≤ [Ω]	I _{max} [mA]	S [mV/A/m]	Product No.
0.4	5	100	125	1.2	1.4	-	50 ^{*)}	00 6169 02
0.715	5	170	125	1.2	1.3	-	60 ^{*)}	00 6169 10
0.960	5	170	125	1.1	1.5	300	60 ^{*)}	00 6169 03
2.66	5	55	125	0.4	2.3	-	140 ^{*)}	00 6169 11
3	5	60	125	0.4	3.0	-	160 ^{*)}	00 6169 12
3.58	5	50	5.5	0.35	2.5	-	-	00 6169 01
7.2	10	50	125	0.3	5.0	175	-	00 6169 04

Gluing with PCB by HSF optional

S-measurement with Helmholtz coil at *)125 kHz



Applications:
Transponder antenna
Decoupling in RF- and IF-circuits
Use in frequency selective circuits

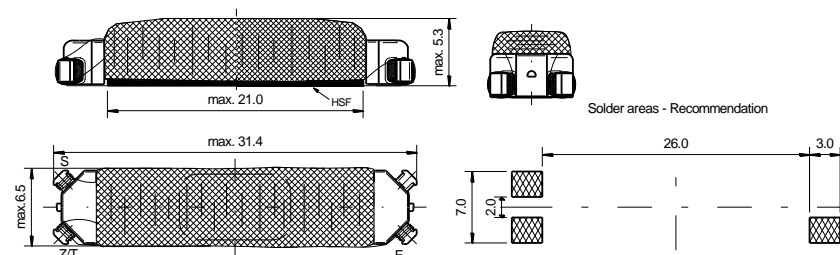


Series Ms 65

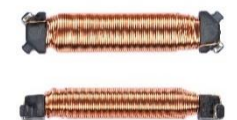
L [mH]	± %	Q ≥	f _{L,Q} [kHz]	f _{res} ≥ [MHz]	R _{DC} ≤ [Ω]	I _{max} [mA]	S [mV/A/m]	Product No.
1	5	50	125	0.9	1.1	200	70 ^{*)}	00 6169 53
2.2	5	40	125	0.5	1.7	120	130 ^{*)}	00 6169 52
3	5	50	125	0.45	2.1	100	170 ^{*)}	00 6169 54
3,74	5	27	5.5	0.4	2.7	100	-	00 6169 51
5	8	45	125	0.38	4	90	210 ^{*)}	00 6169 55

Gluing with PCB by HSF optional

S-measurement with Helmholtz coil at *)125 kHz.



Applications:
Transponder antenna
Decoupling in RF- and IF-circuits
Use in frequency selective circuits



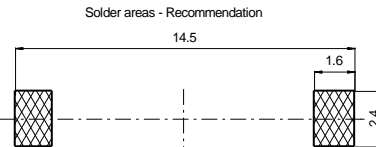
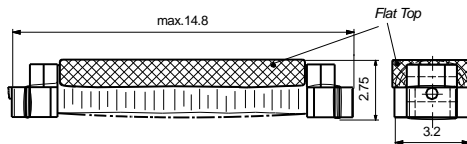
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Series Ms 32c [10µH-39mH]

L [mH]	± %	Q ≥	f _{L,Q} [kHz]	f _{res} ≥ [MHz]	R _{DC} ≤ [Ω]	I _{max} [mA]	S [mV/A/m]	Product No.
1.2	5	15	125	0.7	6.5	60	40 ^(*)	00 6132 34
5.6	5	10	125	0.4	27	30	90 ^(*)	00 6132 35
8.2	10	6	21.8	0.3	40	20	8 ^(*)1)	00 6132 60
9.5	10	8	21.8	0.3	48	18	10 ^(*)1)	00 6132 36
39	10	-	21.8	0.15	175	10	-	00 6132 70

Gluing with PCB by HSF optional

S-measurement with Helmholtz coil at *)125 kHz. *)21.8 kHz



Applications:

Transponder-
Identification- and
Safety-Devices (e.g. for
automotive systems)
Data transmission
5-200 kHz



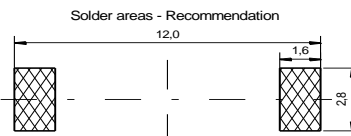
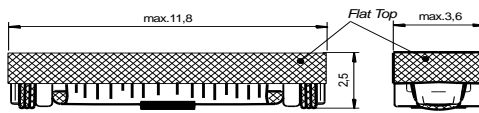
Series Ms 32k [1µH-39mH]

L [mH]	± %	Q ≥	f _{L,Q} [kHz]	f _{res} ≥ [MHz]	R _{DC} ≤ [Ω]	I _{max} [mA]	S [mV/A/m]	Product No.
0.4	5	12	125	1.5	2.8	-	11 ^(*)	00 6172 83
1.6	5	10	125	0.9	11	75	18 ^(*)	00 6172 84
2.37	5	15	125	0.6	17	65	25 ^(*)	00 6172 85
4.7	5	15	125	0.5	40	-	40 ^(*)	00 6172 88
7.2	10	10	125	0.4	62	-	100 ^(*)	00 6172 86
26	5	4	5.5	0.23	153	15	-	00 6172 80

[µH]	± %		[MHz]	[MHz]	[mΩ]			Product No.
5.82	10	-	13.56	100	110	-	-	00 6172 91
6.82	8	-	13.56	50	150	-	-	00 6172 90

Gluing with PCB by HSF optional

S-measurement with Helmholtz coil at *)125 kHz.



Applications:

Transponder antenna
Decoupling in RF-and
IF-circuits
Use in frequency
selective circuits



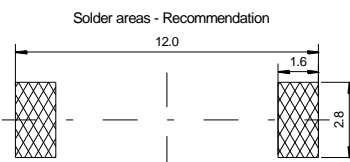
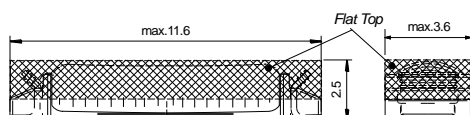
Series Ms 32ka [1µH-39mH]

L [mH]	± %	Q ≥	f _{L,Q} [kHz]	f _{res} ≥ [MHz]	R _{DC} ≤ [Ω]	I _{max} [mA]	S [mV/A/m]	Product No.
0.049	+2/-4	25	125	100	1.5	-	-	00 6172 76
0.0535	2	35	125	20	0,68	-	-	00 6172 77
0.190	5	35	125	2.6	3	-	7 ^(*)	00 6172 35
0,230	5	45	112	2,0	2,9	-	-	00 6172 46
1.33	5	40	125	0.75	12.6	-	-	00 6172 10
2.38	5	45	125	0.6	23	50	33 ^(*)	00 6172 40
2.66	5	55	125	0.6	26	50	35 ^(*)	00 6172 44
4.7	5	40	125	0.45	40	-	50 ^(*)	00 6172 36
7.2	10	40	125	0.35	56	25	65 ^(*)	00 6172 43
26	5		5.5	0.2	200			00 6172 45

[µH]	± %		[MHz]	[MHz]	[mΩ]			Product No.
5.82	10		13.56	100	110	-	-	00 6172 65
230	5	45	112	2.0	2.9			00 6172 46

Gluing with PCB by HSF optional

S-measurement with Helmholtz coil at *)125 kHz.



Applications:

Transponder antenna
Decoupling in RF-and
IF-circuits
Use in frequency
selective circuits



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Series Ms 18k [1µH-14mH]

L [mH]	± %	f _L [kHz]	f _{res} ≥ [MHz]	R _{DC} [Ω] ±10%	I _{max} [mA]	S [mV/A/m]	Product No.
1.1	10	125	1.4	11	45		00 6170 40
1.8	10	125	1.0	22	35		00 6170 43
3.0	10	125	0.5	36	25		00 6170 41
4.7	10	125	0.45	38	-	40*)	00 6170 47
14	10	21.8	0.25	144	10		00 6170 42
14	10	5.5	0.25	144	10		00 6170 42

[µH]	± %	[kHz]	f _{res} ≥ [MHz]	[mΩ]		Product No.
1	15	13.56	100	80		00 6170 48

S-measurement with Helmholtz coil at *)125 kHz.



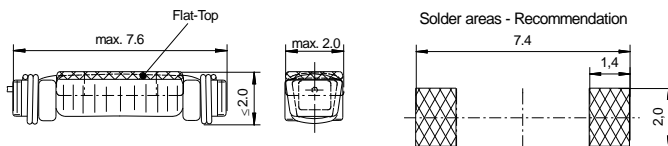
Applications:
Transponder antenna
Decoupling in RF-and IF-circuits
Use in frequency selective circuits



Series Ms 2074 [1µH-12mH]

L [mH]	± %	f _L [kHz]	f _{res} ≥ [MHz]	R _{DC} [Ω] ±10%	I _{max} [mA]	Product No.
0.49	10	125	2.45	11	70	00 6171 40
1.6	10	125	1.45	22	35	00 6171 41
2.6	10	125	1.1	36	30	00 6171 42
10.8	10	21.8	0.6	144	15	00 6171 43
10.8	10	5.5	0.6	144	15	00 6171 43

[µH]	± %	[MHz]		[mΩ]		Product No.
1.88	10	13.56		100		00 6171 19
5.82	10	13.56		230		00 6171 10



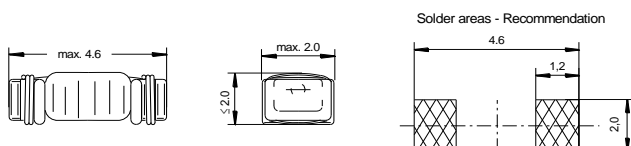
Applications:
Transponder antenna
Decoupling in RF-and IF-circuits
Use in hearing aids
Use in frequency selective circuits



Series Ms 2046 [1µH-2.7mH]

L [mH]	± %	f _L [kHz]	f _{res} ≥ [MHz]	R _{DC} [Ω] ±10%	I _{max} [mA]	Product No.
0.26	10	125	4.2	11	90	00 6171 72
0.46	10	125	3.0	22	75	00 6171 73
0.82	10	125	2.2	36	50	00 6171 71
2.7	10	125	1.0	85	25	00 6171 63

[µH]	± %	[MHz]	[MHz]	[mΩ] ±30		Product No.
1.88	10	13.56	300	190		00 6171 78
5.82	10	13.56	30	270		00 6171 79



Applications:
Transponder antenna
Decoupling in RF- and IF-circuits
Use in hearing aids
Use in frequency selective circuits

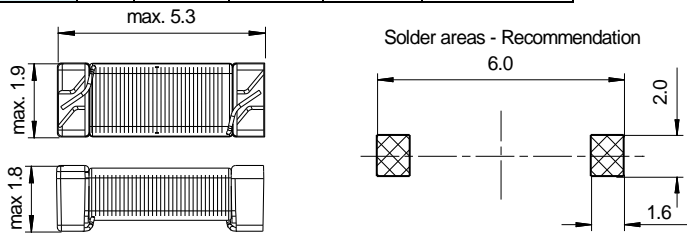


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Series Ms 1851 [1µH-30.5µH]

L [µH]	± %	Q ≥	f _L [kHz]	f _{res} ≥ [MHz]	Product No.
3.8	5	45	10	150	00 6134 33
4.5	5	40	10	150	00 6134 44
30.5	5	45	10	30	00 6134 36

[µH]	± %	Q ≥	[MHz]	[MHz]	Product No.
1.0	10	30	13.56	300	00 6134 31
1.88	10	35	13.56	250	00 6134 32
5.82	10	30	13.56	270	00 6171 79



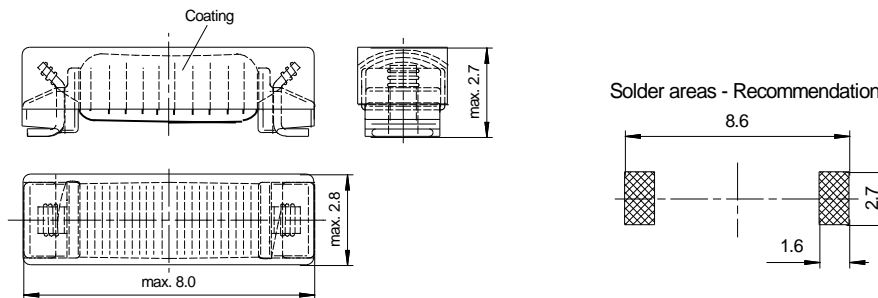
Applications:
Transponder antenna
Decoupling in RF-and IF-circuits
Use in frequency selective circuits



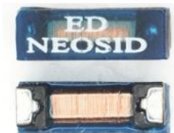
Series Ms 2780 [0.25mH-18.52mH]

L [mH]	± %	Q ≥	f _{LQ} [kHz]	f _{res} ≥ [MHz]	R _{DC} [Ω] ±10%	I _{max} [mA]	S [mV/A/m]	Product No.
0.25	5	30	134.2	2.7	4.4	145	4.6 ^{*)}	00 6173 40
0.35	5	30	134.2	2.0	6.3	120	6.0 ^{*)}	00 6173 41
0.4	5	30	125	1.9	6.4	105	6.5 ^{*)}	00 6173 42
0.44	5	30	134.2	1.85	7.1	100	6.6 ^{*)}	00 6173 43
0.55	5	30	134.2	1.7	9.9	90	7.2 ^{*)}	00 6173 44
0.9	5	38	125	1.2	10.1	75	11 ^{*)}	00 6173 45
1.0	5	38	125	1.1	10.7	70	12 ^{*)}	00 6173 46
2.38	5	38	125	0.75	22	46	18 ^{*)}	00 6173 47
2.66	5	38	125	0.75	30	43	20 ^{*)}	00 6173 48
4.7	5	38	125	0.5	45	30	40 ^{*)}	00 6173 49
7.2	8	35	125	0.4	70	27	65 ^{*)}	00 6173 50
18.52	5	27	125	0.32	163	17	80 ^{*)}	00 6173 51

S-measurement with Helmholtz coil at ^{*)}125 kHz.



Applications:
Transponder antenna
Decoupling in RF-and IF-circuits
Use in frequency selective circuits



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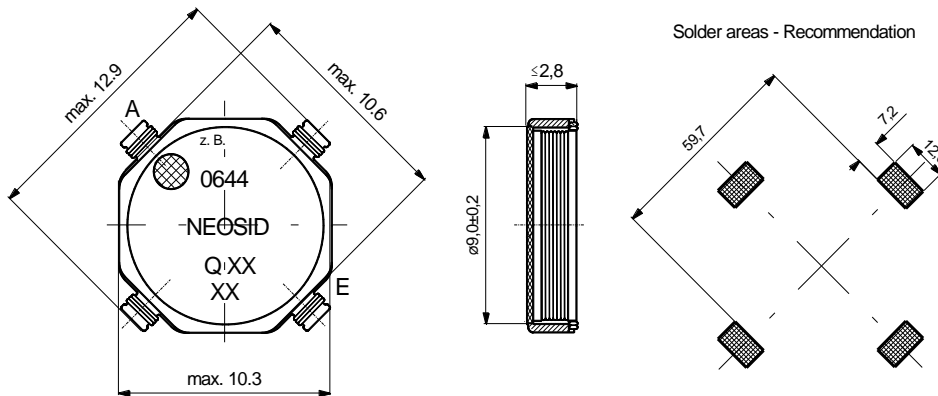
Z-Antenna

Series SM-W 902 [1µH-65mH]

L [mH]	± %	Q ≥	f _{L,Q} [kHz]	f _{res} ≥ [MHz]	R _{DC} ≤ [Ω]	I _{max} [mA]	S [mV/A/m]	Product No.
0.11	10	50	125	9	0.8	270	-	00 6161 31
1.2	10	55	125	1.5	5.8	60	8 ^{*)}	00 6161 20
2.2	6	80	125	1.2	10	45	17 ^{*)}	00 6161 21
7.2	10	60	125	0.9	30	25	50 ^{*)}	00 6161 23
52.3	10	15	21.8	0.4	190	10	-	00 6161 00
52.3	10	8	5.5	0.4	190	10	-	00 6161 00
5	10	15	21.8	0.3	220	6	16 ^{*)}	00 6161 10
65	10	8	5.5	0.3	220	6	-	00 6161 10

S-measurement with Helmholtz coil at ^{*)}125 kHz. ^{*)}21.8 kHz

Applications:
Keyless entry systems
Safety systems RFID

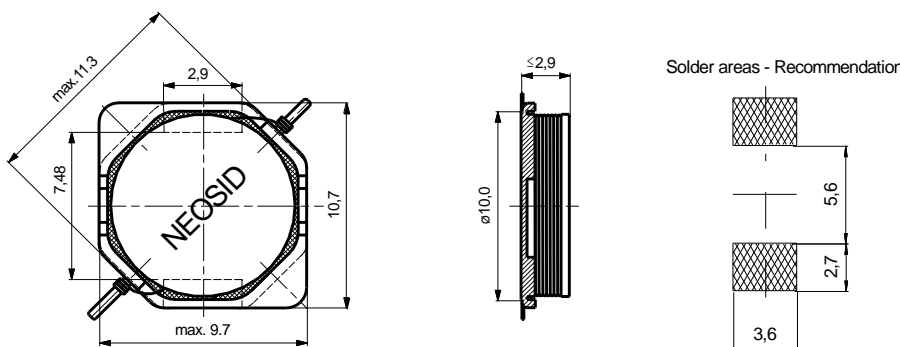


Series SM-W903 [1µH-65mH]

L [mH]	± %	Q ≥	f _{L,Q} [kHz]	f _{res} ≥ [MHz]	R _{DC} ≤ [Ω]	I _{max} [mA]	S [mV/A/m]	Product No.
3.9	10	80	125	1.0	13.5	270	-	00 6161 57
2.37	6	80	125	1.1	12	40	17 ^{*)}	00 6161 56
1.2	10	55	125	1.5	5.8	60	8 ^{*)}	00 6161 50
2.2	6	80	125	1.2	11	45	17 ^{*)}	00 6161 51
3.45	3	75	125	-	15.5	30	-	00 6161 55
7.2	6	60	125	0.9	35	25	50 ^{*)}	00 6161 54
52.3	10	15	21.8	0.4	190	10	-	00 6161 52
52.3	10	8	5.5	0.4	190	10	-	00 6161 52
65	10	15	21.8	0.3	230	6	16 ^{*)}	00 6161 53
65	10	8	5.5	0.3	230	6	-	00 6161 53

S-measurement with Helmholtz coil at ^{*)}125 kHz. ^{*)}21.8 kHz

Applications:
Keyless entry systems
Safety systems RFID



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3D-Antenna with reduced device height

The small 3D LF/ HF antennas are now available with reduced height down to 2.8 mm.

Series 3D-11

Lx [mH]	Qx ≥	RDC x [Ω] ≤	Ly [mH]	Qy ≥	RDC y [Ω] ≤	Lz [mH]	Qz ≥	RDC z [Ω] ≤	3xS [mV/A/m]	fLQ [kHz]	Product No.:
11.5	5	260	11.5	5	260	15.5	5	440	9 ^{*1)}	21.8	00 6112 90
4.82	15	120	4.82	15	120	5.87	15	150	75 [*]	125	00 6112 91
2.38	15	100	2.38	15	100	3.45	15	100	40 [*]	125	00 6112 92
2.47	15	70	2.47	15	70	2.47	15	70	40 [*]	125	00 6112 93
4.7	15	160	4.7	15	160	4.7	15	160	58 [*]	125	00 6112 94
7.1	15	200	7.1	15	200	9.0	15	200	90 [*]	125	00 6112 95

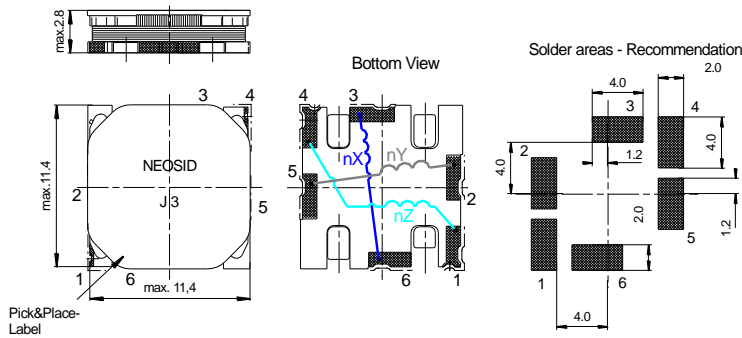
Lx-z-tolerance ±5%

S-measurement with Helmholtz coil at ^{*}125 kHz, ^{*1)}21.8 kHz

[μH]	Qx ≥		[μH]	Qy ≥		[μH]	Qz ≥		Lp [μH]	MHz	Product No.:
17.46	20	-	17.46	20	-	17.46	20	-	5.82 ^{*2)}	13.56	00 6112 96

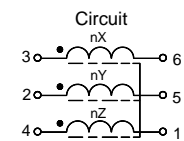
Lx-z-tolerance ±15%

^{*2)} x, y and z must be interconnected in parallel.



Applications:

- Keyless entry systems
- Keyless go systems
- Access control

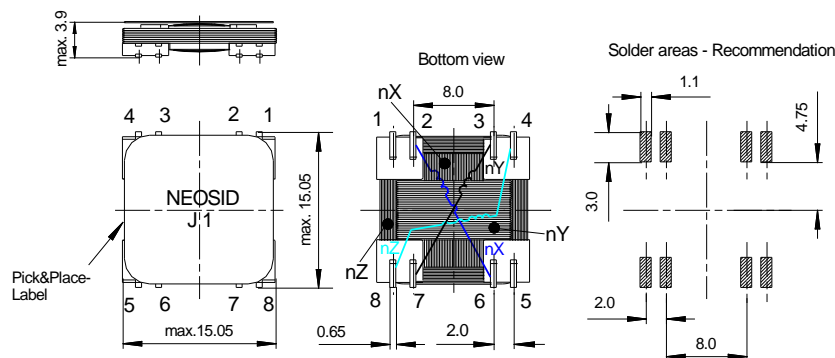


Series 3D-15

Lx [mH]	Qx ≥	RDC x [Ω] ≤	Ly [mH]	Qy ≥	RDC y [Ω] ≤	Lz [mH]	Qz ≥	RDC z [Ω] ≤	3xS [mV/A/m]	fLQ [kHz]	Product No.:
4.7	11	140	4.7	11	140	4.7	26	115	120 [*]	125	00 6114 90
4.5	25	80	4.5	25	80	5.0	25	120	115 [*]	125	00 6114 91
2.38	17	80	2.38	17	80	3.45	26	80	62 [*]	125	00 6114 92
2.47	23	45	2.47	23	45	2.47	25	72	62 [*]	125	00 6114 93
2.47	27	45	2.47	27	45	2.8	26	72	62 [*]	125	00 6114 94

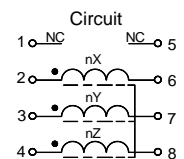
Lx-z-tolerance ±15%

S-measurement with Helmholtz coil at ^{*}125 kHz



Applications:

- Keyless entry systems
- Keyless go systems
- Access control



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Transponderantennen für RFID

Wir fertigen komplizierte Ferrite in einem speziellen Spritzgussverfahren und haben somit weitaus größere Möglichkeiten der Formgebung.

So ist es je nach Einsatzmöglichkeit, Anwendungsgebiet und Konstruktionskonzept eine Vielfalt an Formen machbar. Dies ermöglicht es uns, kundenspezifische RFID Transponder-Spulen herzustellen.

Kennzeichen

- ✓ Geringe Höhe
- ✓ Automatisch bestückbar
- ✓ Für Reflow- und Dampfphasenlötung
- ✓ Ansaugfläche ASF
- ✓ Verklebung mit PCB durch HSF (Heiß-Siegel-Fläche) für optimale Falltesteigenschaften
- ✓ Betriebstemperaturbereich -40°C bis +125°C

Anwendungen

- ✓ Transponder-. Identifikation- und Sicherheitssysteme (z.B. Automotive)
- ✓ Schlüssellose Eintrittssysteme
- ✓ RFID Sicherheitssysteme

RFID Transponder Coils

We manufacture complex ferrites in a special injection-molding process, which opens up far more options when it comes to shaping.

This means that a multitude of shapes is feasible, depending on the application requirements and the design concept.

This enables us to produce transponder coils for customer's specification.

Features

- ✓ Low height
- ✓ Suitable for automatic placement
- ✓ For reflow and vapor phase soldering
- ✓ Pick and place area ASF
- ✓ Gluing with PCB by HSF (hot melting dot) for optimal drop test performance
- ✓ Operating temperature range -40°C to +125°C

Applications

- ✓ Transponder-. Identification- and Safety-Devices (e.g. for automotive systems)
- ✓ Keyless entry systems
- ✓ Safety systems RFID

